

POSTER

DNA barcoding Indonesian Acanthopleurinae (Polyplacophora)

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The approximately 14 recognized species of Acanthopleurinae worldwide include conspicuous and large tropical shore chitons of the genera *Acanthopleura*, *Liolphura*, and *Squamopleura*. They are well studied for their impressive homing behavior, shell eyes (ocelli), radular biomineralization, and bioerosion activities, but have a relatively shallow fossil record, not recorded from before the Miocene. The accessibility of these chitons on the shores of Indonesia made them an excellent test case for new efforts to DNA barcode biodiversity, training and employing Indonesians with the objective of initiating a more complete assessment of biodiversity throughout the Coral Triangle. The latest monographic treatment including Acanthopleurinae was published in 2006 and reports only three members of this taxon in the vicinity of Indonesia: *Acanthopleura spinosa* (Bruguière 1792), *A. gemmata* (De Blainville 1825), and *Squamopleura miles* (Carpenter in Plsbry 1893). Here we apply current and accepted DNA barcoding methods to assess biodiversity in Acanthopleurinae throughout Indonesia, also employing available published or unpublished relevant sequences. Because Indonesian marine research has been historically underrepresented in the international scientific community until recent years, we hypothesized that we would discover new operational taxonomic units (OTUs), which could represent previously-undescribed species. If the Coral Triangle acts as a center of origin of chiton biodiversity, we hypothesized that the phylogenetic positions of the Indonesian chitons will be more derived than described species. Our combined analysis of mitochondrial COI and 16S rDNA gene portions for over 200 Acanthopleurinae from Indonesia has confirmed this expectation. Our preliminary analyses have identified as many as 11 OTUs, indicating that either cryptic species or strong phylogeographic structure are to be expected in this region of known high endemism. We conclude by making recommendations for future intertidal research in Indonesia and the Coral Triangle.

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